Allergic rhinitis and urticaria burden and antihistamine treatment options in Thailand: A modified Delphi study

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Background: Allergic rhinitis (AR) and chronic urticaria impose significant socioeconomic burdens on lower-income countries. Despite the availability of evidence-based guidelines, their implementation varies, and comprehensive data on these allergic conditions are notably lacking in Thailand.
Objectives: We sought to describe current management strategies for AR and urticaria in Thailand.
Methods: The Allergy, Asthma, and Immunology Association of Thailand used a modified Delphi method to explore consensus on management strategies for AR and urticaria. Clinicians with expertise in these conditions provided input through a web-based questionnaire. The survey assessed disease burden in Thailand, its impact on quality of life, and the use of H_1-antihistimine treatment options.
Results: In total, 105 experts, mainly in allergy and immunology, with 70% having more than 10 years of clinical practice, provided input. Consensus was achieved on 22 (88%) of the 25 statements. Second-generation antihistamines were preferred as initial treatment for AR and urticaria because of their reduced sedation and lack of anticholinergic effects. Almost all participants (98.1%) recommended these antihistamines for acute and chronic urticaria. Additionally, 87.6% of the respondents favored up-dosing a single antihistamine agent for managing chronic urticaria.
The benefits of orally disintegrating antihistamines were particularly noted for their ease of administration and patient compliance.
Conclusion: Results indicate a knowledge gap in evidence-based practices among Thai clinicians. Addressing this gap through enhancing clinical guideline adherence and encouraging pharmacist involvement in patient care can improve access to medication and better disease management, ultimately improving patient outcomes while reducing the socioeconomic burden of AR and urticaria. (J Allergy Clin Immunol Global 2025;4:100444.)

Key words: *Allergic rhinitis, antihistamines, Delphi method, urticaria*

Allergic rhinitis (AR) is a prevalent histamine-driven nasal disorder affecting 10% to 40% of individuals worldwide, causing nasal congestion, runny nose, sneezing, and itching.[1-3] When the eyes are affected, it is termed *allergic rhinoconjunctivitis.* Although well documented in high-income countries, its growing prevalence in low- and middle-income countries highlights a rising burden.[2,4,5] This increase has significant socioeconomic impacts, including greater health care utilization and decreased productivity due to absenteeism, thus underscoring the need for targeted research and health care strategies.[6,7]

Treatment of AR and allergic rhinoconjunctivitis primarily involves general practitioners and specialists such as ear, nose, and throat doctors, allergists, and pulmonologists.[8,9] Despite the availability of several evidence-based guidelines (eg, EUFOREA 2020; ARIA 2016 and 2020), implementation varies, particularly in low- and middle-income countries where resource constraints and access issues may impede adherence to recommended practices.[10-13]

Urticaria, or hives, is a histamine-driven dermatologic condition affecting about 1% of the global population and poses significant management challenges, particularly in low- and middle-income countries.[14,15] In these regions, like AR, disparities in treatment accessibility and quality are notable.[16]

Despite the prevalence of these allergic conditions and the availability of antihistamines, corticosteroids, biological agents, and immunotherapy, there is a notable gap in the comprehensive data collected in Thailand. The present research conducted by the Allergy, Asthma, and Immunology Association of Thailand (AAIAT) utilized a modified Delphi technique to address this data shortfall and capture a real-world snapshot of current

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Abbreviations used
AAIAT: Allergy, Asthma and Immunology Association of Thailand
AR: Allergic rhinitis
ARIA: Allergic Rhinitis and Its Impact on Asthma
CSU: Chronic spontaneous urticaria
CU: Chronic urticaria
EAACI: European Academy of Allergy and Clinical Immunology
EDF: European Dermatology Forum
ODT: Orodispersible tablet
QoL: Quality of Life
WAO: World Allergy Organization

management strategies for AR and urticaria in Thailand. The survey findings are expected to contribute valuable insights into local treatment patterns and identify gaps in care and management strategies for these pervasive conditions.

METHODS

This study involved the collection of survey data and was conducted in accordance with ethical standards. Ethical approval was obtained from the Chulalongkorn University institutional review board (approval 1194/2024). No sensitive data were collected. Physicians actively chose to participate in the survey and, by doing so, agreed to the data retention policy, data privacy statement, and data processing agreement. The interview questions were not aimed at investigating sensitive issues like religious or political beliefs or sexual orientation. AAIAT ensured the pseudonymization of individual answers before primary data abstraction and analysis.

Study design

A modified Delphi technique, an iterative process used to gather experts' opinions and reach a group consensus, facilitated consensus building on management strategies as well as treatment options for AR and urticaria in Thailand. Unlike traditional methods like focus groups, the Delphi method keeps participants anonymous, allowing them to share their honest opinions without the pressure to conform to others. This anonymity helps ensure objectivity in decision-making. Initially, a 10-member expert panel from the AAIAT steering committee identified the key issues related to the burden of AR and CU, as well as their treatment. Both international and local journals were selected as references to highlight the burden of AR and CU as well as treatment concerns supporting each statement. Each statement was thoroughly reviewed and revised by the expert panel. Three rounds of meetings were held before the launch of the questionnaire to test, evaluate, and revise the content, ensuring the statements were highly relevant and accurate. The final set of 25 statements and 11 questions was categorized into 4 domains. The first covered the experts' qualifications and experiences, while the second and third domains examined the burden of AR and urticaria in Thailand and their impact on quality of life (QoL). The fourth addressed H_1-antihistimine treatments, their applicability across patient populations, and practical management considerations. The steering committee developed and validated a web-based questionnaire, which was pilot tested to ensure relevance. Responses used a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." A full copy of the questionnaire is provided in this article's Online Repository at www.jaci-global.org.

Questionnaire respondents

The survey's target sample size was a minimum of 100 participants, representing a cross section of clinicians from various Thai institutions. The targeted participants in this survey included both members and nonmembers of AAIAT present at the annual meeting. These individuals are recognized as specialists in the fields of AR and urticaria in Thailand, with extensive postgraduate training, including a minimum of 6 years of residency and fellowship.

Data collection and analysis

Given the national scope of the study, a QR code–based platform was chosen as a cost-effective and efficient way for experts to participate easily. The online survey was accessible via a QR code shared at the AAIAT's annual meeting. It was available from March 25 to 29, 2024, and participants completed it anonymously on their devices, with no personal data disclosed. Answers were reported as a percentage of the total physician responses. Additionally, responses in the categories of "agree" (4) and "strongly agree" (5) were combined into a single category. Consensus was defined *a priori* as 80% agreement (score 4 or 5) among the respondents.[17]

Reporting

We reported the outcomes according to the guidance on Conducting and REporting DElphi Studies (aka CREDES).[18]

RESULTS

Respondent characteristics

By the end of the survey period, data were collected from 105 allergy experts from various health care settings: private hospitals/clinics (43%), public health hospitals/clinics (35%), and medical school hospitals (22%). The respondents represented diverse specializations, primarily allergy and immunology (44%), followed by pediatrics (24%), ear, nose, and throat (18%), and dermatology (11%). Regarding their professional experience, a significant majority (72.4%) had graduated from medical school more than 10 years ago, while the remaining 27.6% graduated less than 10 years ago (Fig 1).

Respondents also shared factors influencing their selection of medicine for patients with AR and urticaria beyond the information of the medicine itself (Fig 2). The most significant factors reported emphasized economic considerations, such as government reimbursement of the medicine's cost (38.1%), insurance reimbursements (25.7%), and the drug's inclusion on the National List of Essential Drugs (20%). Minority factors (16.2%) identified included drug price, symptom severity and duration, prior medication receipt, and patient preference.

Consensus on statements

On the basis of the predefined criteria, 22 of the 25 proposed statements reached consensus (Table I). These are discussed in more detail below.

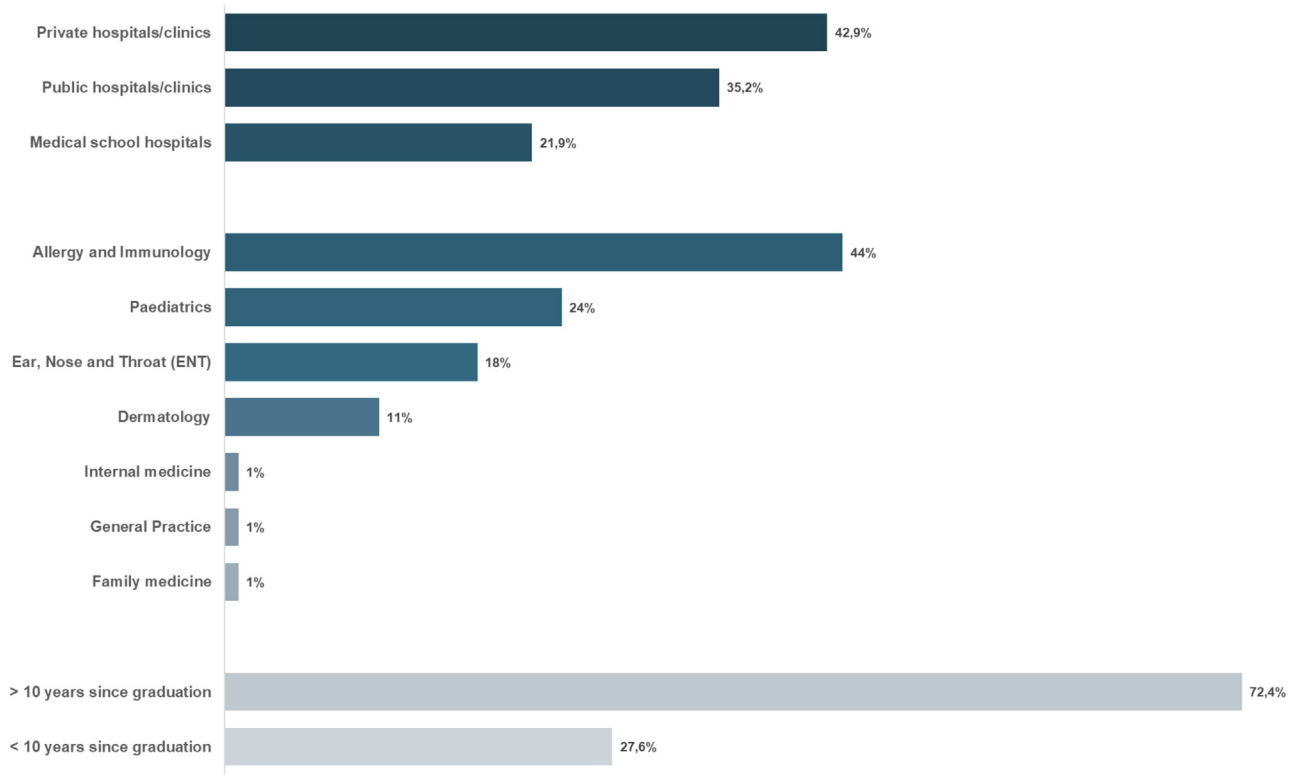

FIG 1. Summary of respondent characteristics.

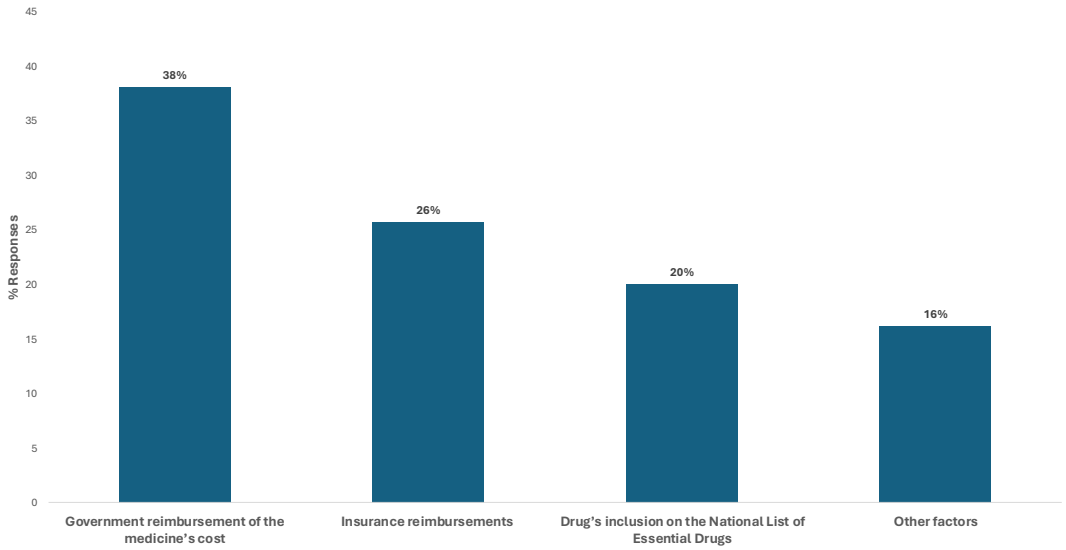

FIG 2. Factors influencing medication selection for AR and urticaria.

Burden of disease

AR. The results revealed that 90.5% of respondents agreed that AR has significant financial implications for health care and society as a result of its impact on patients' physical, psychological, social, educational, and occupational functioning. Additionally, 92.3% of respondents agreed that allergic symptoms disrupt children's daily activities and sleep, cause emotional distress, and negatively impact learning and cognition.

Of our 105 respondents, 87.6% categorized AR patients by symptom severity. When determining AR severity, 31.4% relied on clinical judgment, 26.7% used the visual analog scale, 25.7% followed the Allergic Rhinitis and Its Impact on Asthma (ARIA) guidance, and 13.3% used the Total Nasal Symptom Score, all of which are used as standard scales/scores in the European Union.[13,19-21] Most practitioners had over 10 years of clinical experience (Fig 3).

TABLE I. Statements reaching consensus

Statement no.	Statement	Answer 4	Answer 5	Combined
1	The significant prevalence of allergic rhinoconjunctivitis and urticaria in adults, the elderly, and children has important financial implications for health care systems and society because of the negative effect on patients' physical, psychological, social, educational, and work functioning.	30.5%	60.0%	90.5%
2	Allergic symptoms frequently interfere with a child's ability to participate in daily activities and disrupt normal sleeping patterns, causing emotional distress and negatively affecting learning and cognition.	35.2%	57.1%	92.3%
3	Urticaria is a cutaneous disease characterized by the daily or almost daily appearance of transitory pruritic wheals for at least 6 weeks. It is difficult to control; its evolution is unpredictable, with remissions and spontaneous recurrences; and it is unknown whether current treatments can modify its natural history.	29.5%	57.1%	86.6%
7	First-generation antihistamines are associated with adverse effects such as sedation and reduced psychomotor and cognitive function, which may impair learning and reduce work efficiency.	14.3%	80.0%	94.3%
8	When taken at night, first-generation H_1-antihistimines increase latency to onset and reduce the duration of REM sleep, causing impairment of attention, vigilance, working memory, and sensory-motor performance the next days, also as a consequence of their long half-life.	32.4%	53.3%	85.7%
9	In contrast to first-generation H_1-antihistimines, modern second-generation H_1-antihistimines cause lower or minimal sedation, are free from anticholinergic effects, and are recommended as first-line therapeutic options for patients with AR and urticaria.	27.6%	64.8%	92.4%
10	Second-generation antihistamines are a heterogeneous group of drugs showing different pharmacologic properties and safety profiles.	44.8%	43.8%	88.6%
11	ODTs of second-generation antihistamines are an option for children, adults, and the elderly who have difficulty swallowing or dysphagia to increase patient compliance and treatment efficacy.	36.2%	56.2%	92.4%
12	ODTs do not require water for oral administration, easily dissolve or disperse in saliva within a few seconds, are portable and easy to transport, and are less sensitive to environmental conditions like temperature and humidity.	36.2%	54.3%	90.5%
13	ODTs allow easier administration to patients who cannot swallow, such as the elderly, stroke victims, and bedridden patients; patients who should not swallow, such as renal failure patients; and those who refuse to swallow, such as pediatric, geriatric, and psychiatric patients.	41.9%	51.4%	93.3%
14	Patients with allergic rhinoconjunctivitis require fast-acting, effective, and nonsedating treatment, and most modern second-generation oral H_1-antihistimine agents, such as bilastine, cetirizine, and fexofenadine, meet these criteria.	36.2%	49.5%	85.7%
15	Second-generation H_1-antihistimines are the antihistamines of choice for the treatment of allergic rhinoconjunctivitis in children because of their high selectivity for H_1 receptors, clinical efficacy, minimal adverse effects on cognition, and long-term tolerability.	29.5%	62.9%	92.4%
16	The ideal antihistamine for the treatment of acute urticaria should be effective in relieving symptoms, have a rapid onset of action and not cause unwanted effects such as drowsiness.	18.1%	81.0%	99.1%
17	The ideal antihistamine for the treatment of CU should be effective in relieving symptoms, have a long duration of action, preferably be administered once daily, and not cause unwanted effects such as drowsiness.	10.5%	87.6%	98.1%
18	Second-generation H_1-antihistimines fit the profile of the ideal antihistamine for the treatment of acute and CU and are therefore recommended as first-line therapy.	21.9%	76.2%	98.1%
19	Urticaria treatment should not interfere with everyday life or school performance. Therefore, second-generation nonsedating antihistamines are recommended as the first-line treatment for urticaria in children.	13.3%	83.8%	97.1%
20	Second-generation H_1-antihistimines should be used in the treatment of CSU. In patients with severe and resistant CSU, these could be used at doses up to 4 times the standard dose before prescribing second-line treatments. One antihistamine can be switched to another to individually determine which is the most effective and safest for each patient. Continuous use is more beneficial and effective than use on demand.	22.9%	72.4%	95.3%
21	Prescribing second-generation H_1-antihistimines with an up-dosing pattern by one single agent is more effective than using different molecules in controlling symptoms of urticaria.	36.2%	51.4%	87.6%
22	Antihistamines can cause drowsiness. They are widely used in "cold cures" and the treatment of hay fever, asthma, and allergic rashes. The condition itself may preclude aviation safety-related duties. For air force personnel, it is recommended to prescribe nonsedative antihistamines, which do not degrade human performance.	9.5%	87.6%	97.1%
23	Urticaria must be controlled with the minimum effective dose of medication during pregnancy and lactation. Hydroxyzine is contraindicated in pregnancy. During lactation, bilastine, cetirizine, or loratadine are recommended if H_1-antihistimines are necessary.	32.4%	55.2%	87.6%

(Continued)

TABLE I. *(Continued)*

Statement no.	Statement	Answer 4	Answer 5	Combined
24	Antihistamine adverse effects are more pronounced in ageing adults and can cause confusion, drowsiness, balance problems, urinary retention, and glaucoma exacerbation. Second-generation antihistamines that do not need dose adjustment, such as bilastine, must be the first-line therapy in treating AR and urticaria for these seniors.	24.8%	65.7%	90.5%
25	For patients with kidney failure and/or liver dysfunction, the selection of antihistamines must be carefully considered. Selecting the medication that does not need dose adjustment in those conditions is an advantage.	13.3%	81.9%	95.2%

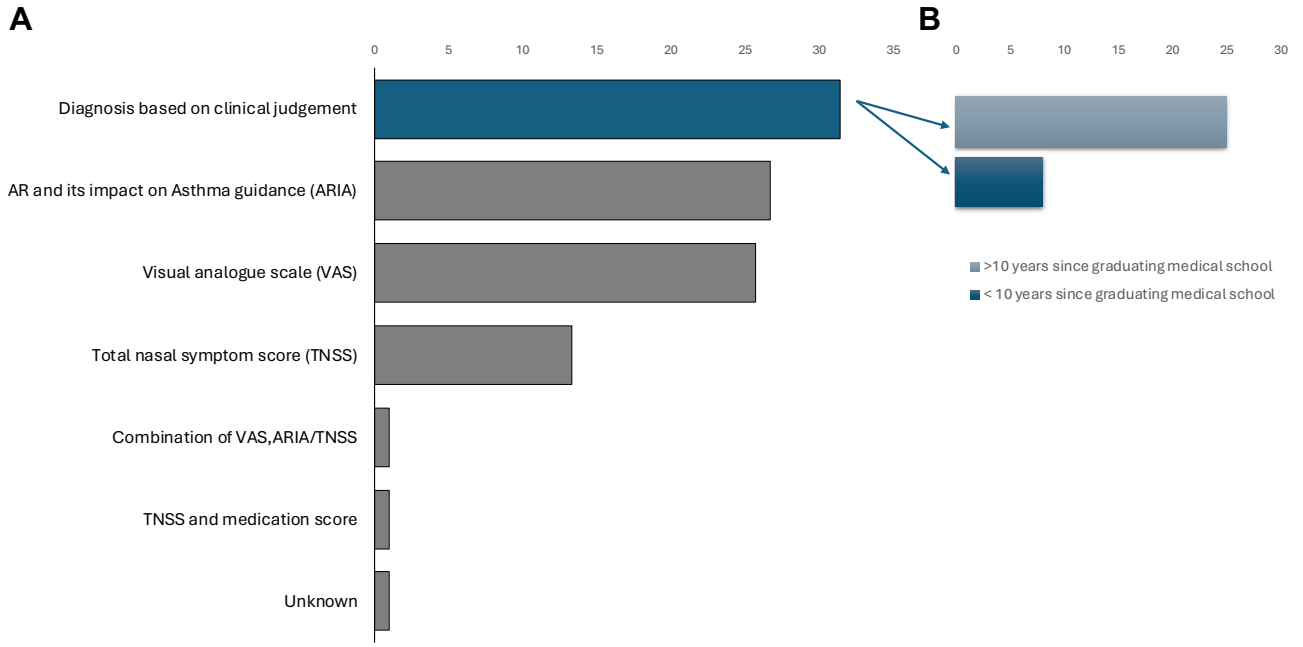

FIG 3. **(A)** Use of standardized assessment tools/scales for AR among respondents. **(B)** Breakdown of clinician experience for those making diagnosis based on clinical judgment.

Urticaria. Most respondents (86.6%) agreed that urticaria is a cutaneous condition characterized by recurring emergence of transient pruritic wheals that persist for at least 6 weeks. The disease is inherently challenging to manage, displaying unpredictable evolution with periods of remission and spontaneous recurrences. The respondents also highlighted the uncertainty surrounding the efficacy of existing treatments in altering the condition's natural course.

Treatment options for AR and urticaria

In the final domain, respondents were asked about their antihistamine treatment preferences for AR and urticaria in different patient groups (Table II).

First- versus second-generation antihistamines

The majority (94.3%) of respondents strongly agreed that first-generation antihistamines are associated with adverse effects such as sedation and reduced psychomotor and cognitive function, which may impair learning and reduce work efficiency. Furthermore, 85.7% strongly agreed that when administered at night, these antihistamines, because of their long half-life, prolong the onset latency and decrease the duration of REM sleep, leading to impaired attention, vigilance, working memory, and sensory-motor performance in the next day.

Consequently, 92.4% of respondents endorsed second-generation antihistamines as the preferred initial treatment for AR and urticaria, citing reduced sedation and the absence of anticholinergic effects. Moreover, 88.6% agreed that second-generation antihistamines comprise diverse drugs exhibiting distinct pharmacologic characteristics and safety profiles. This preference was further supported by Thai experts strongly endorsing the perceived benefits, versatility, and applicability of orodispersible tablets (ODTs) of second-generation antihistamines across different patient groups. Most respondents (92.4%) agreed that ODTs are suitable for children, adults, and the elderly with swallowing difficulties or dysphagia, thus enhancing compliance and treatment effectiveness. Furthermore, 90.5% recognized ODTs' practical advantages, such as not requiring water for administration, rapid dissolution in saliva, and portability. Last, a notable 93.3% agreed that ODTs facilitate

TABLE II. Oral H_1-antihistimine treatment options

Medication	Absorption	Half-life	Dosage	Dose adjustment	Contraindication
Bilastine	1.3 hours	14.5 hours	● Adults: 20 mg once daily ● Adolescents (12-17 years): 20 mg once daily ● Children (6-12 years and >20 kg): 10 mg	Not required	
Cetirizine	1 hour	10 hours	● Adults: 10 mg once daily ● Adolescents (12-17 years): 10 mg once daily ● Children (6-12 years): 5 mg twice daily	Adjustment recommended in elderly patients with moderate to severe renal impairment and in patients with hepatic impairment if concomitant renal impairment is present	Patients with end-stage renal disease with eGFR <15 mL/min
Desloratadine	3 hours	27 hours	● Adults: 5 mg once daily ● Adolescents (12-17 years): 5 mg once daily	Not required	Avoid if medical or familial history of seizures
Fexofenadine	1 hour	11-15 hours	● Adults: 120 mg once daily ● Adolescents (12-17 years): 120 mg once daily ● Children (6-11 years): 30 mg twice daily	Not required	
Levocetirizine	0.9 hour	8 hours	● Adults: 5 mg once daily ● Adolescents (12-17 years): 5 mg once daily ● Children (6-12 years): 5 mg once daily ● Children (2 to 6 years): 1.25 mg (2.5 mL solution) twice daily	Adjustment of dose recommended in elderly patients with moderate to severe renal impairment	Patients with end-stage renal disease with eGFR <15 mL/min
Loratadine	1 hour	8.4 hours	● Adults: 10 mg once daily ● Adolescents (12-17 years): 10 mg once daily ● Children (6-12 years): 10 mg once daily	Not required	
Rupatadine	45 min	5.9 hours	● Adults: 10 mg once daily ● Adolescents (12-17 years): 10 mg once daily ● Children (2-11 years), ≥25 kg: 5 mL (5 mg) of rupatadine, oral solution once daily ● Children (2-11 years), 10-25 kg: 2.5 mL (2.5 mg) of rupatadine, oral solution once daily	Caution should be taken prescribing rupatadine to people aged ≥65 years because of potential increased sensitivity	

Data are derived from respective Summary of Product Characteristics (SMPC) of different products. *eGFR,* Estimated glomerular filtration rate.

medication administration for patients with severe swallowing restrictions—such as the elderly, stroke victims, and those who are bedridden—as well as for patients advised against swallowing (eg, those with renal failure) and for those who are resistant to swallowing (including certain pediatric, geriatric, and psychiatric patients), thus demonstrating the broad applicability of ODTs in addressing diverse clinical needs.

Allergic rhinoconjunctivitis

Most respondents emphasized the need for fast-acting, effective, and nonsedating treatments for allergic rhinoconjunctivitis. Specifically, 85.7% agreed that modern second-generation oral H_1-antihistimines, including bilastine, cetirizine, and fexofenadine, meet these criteria. Additionally, 92.4% preferred second-generation H_1-antihistimines for children as a result of their high selectivity for H_1 receptors, proven clinical efficacy, minimal cognitive adverse effects, and favorable long-term tolerability.

Acute and chronic urticaria

The survey highlights specific characteristics of an ideal antihistamine for urticaria. For acute urticaria, 99.1% favored a rapid onset of action without adverse effects like drowsiness. Likewise, 98.1% preferred antihistamines for chronic urticaria (CU) that provide long-lasting relief, require once-daily dosing, and avoid sedation. Further supporting the preference for newer medications, the same percentage (98.1%) recognized second-generation H_1-antihistimines as fitting the profile for the ideal treatment of both acute and CU, recommending them as first-line therapy. This preference aligns with the treatment objectives for urticaria, which 97.1% agreed should not disrupt daily activities or school performance. Accordingly, second-generation nonsedating antihistamines are particularly favored as the first-line therapy for children.

Role of up-dosing in managing CU

Most respondents (95.3%) endorsed second-generation H_1-antihistimines as the preferred first-line treatment for chronic spontaneous urticaria (CSU). Although an off-label use, up-dosing up to 4 times the standard amount is advised for severe or resistant cases. Continuous receipt is preferred to on-demand receipt for better efficacy. Additionally, 87.6% favored up-dosing a single agent instead of multiple drugs, highlighting a preference for simplicity and consistency in treatment approaches.

Special populations

A substantial majority (97.1%) agreed that antihistamines, commonly prescribed for conditions like colds, hay fever, asthma, and allergic rashes, may cause drowsiness that could compromise

safety-critical occupations, as in aviation. Consequently, nonsedating antihistamines are recommended for air force personnel to ensure optimal performance.

In pregnancy and lactation, 87.6% of experts agreed that managing urticaria requires minimal effective medication dosages. Hydroxyzine is contraindicated during pregnancy, and for lactating individuals, bilastine, cetirizine, or loratadine are preferred options.

A significant majority (90.5%) agreed that adverse effects like confusion, drowsiness, balance problems, urinary retention, and potential exacerbation of glaucoma are more pronounced in aging adults. For treating AR and urticaria in this group, second-generation antihistamines, which do not require dose adjustment, are advised as the first-line therapy. Among elderly patients or those with comorbidities, bilastine was the preferred first-choice antihistamine (78%), followed by desloratadine (43%) and cetirizine (33%).

Respondents strongly agreed (95.2%) that careful selection of antihistamines is necessary for patients with kidney or liver dysfunction, favoring those that do not require dose adjustments. Bilastine was the preferred choice (92%), followed by desloratadine (49%) and cetirizine (28%).

DISCUSSION

This AAIAT survey offers a comprehensive view of Thailand's current clinical practices for AR and urticaria management, highlighting local prescribing behaviors and the diverse practice settings and specializations among respondents. Most respondents were specialists in allergy and immunology, pediatrics, ear, nose, and throat, and dermatology, underscoring the interdisciplinary approach needed for managing complex allergic disorders. The significant proportion of respondents with over a decade of professional experience provides well-informed insights into clinical practices. Economic considerations, such as government and insurance reimbursements and inclusion on the National List of Essential Drugs, significantly influence medicine selection, highlighting the need for cost-effective treatment options.

Burden of AR

Most respondents acknowledged AR's considerable financial burden, consistent with existing literature on its significant economic impact across all age groups. These costs stem from direct health care utilization and significant indirect expenses due to reduced productivity. In Thailand, direct health care costs impact 17% of the average wages.[22] The 2016 Asia-Pacific Burden of Respiratory Diseases (APBORD) study found that AR accounted for 44.2% of respiratory disease cases in Thailand, significantly impairing productivity. Work productivity losses were 82.8% of overall AR-related expenses, amounting to $1378, with presenteeism, or reduced productivity at work, as the main cost contributor.[23] Strategies to promote better health and manage chronic respiratory conditions could reduce presenteeism, ease the economic burden, and improve patient QoL. Improving adherence to guideline-approved treatment is one such strategy that can result in potential savings of approximately $104 billion.[24]

As a systemic inflammatory disease, AR is associated with comorbid conditions like sinusitis and asthma, compounding treatment costs.[25] These costs are expected to rise with the increasing global prevalence of AR as a result of urbanization and climate change, causing greater pollutant and allergen exposure.[5] Again, consistent with the literature, our respondents highlighted that AR's pervasive effects extend beyond financial aspects, significantly impairing patients' QoL, sleep, and daily activities.[4,6]

Given AR's multidimensional implications, comprehensive health care strategies that address medical management and broader impacts are needed. For example, as trusted community health professionals, pharmacists can alleviate the burden and improve QoL by enhancing awareness, educating patients and carers, personalizing medication use, and signposting patients to physicians.[5] Given their crucial role in primary health care, it is essential to educate pharmacists on these aspects further.

When assessing disease severity, many practitioners (31.4%) relied on their clinical experience or personal judgment, which can enhance tailored patient care but also introduce variability and affect treatment consistency across different practitioners. The underutilization of standardized, evidence-based assessment tools makes harmonizing assessments across diverse clinical settings challenging. It points to a need for further research into barriers to adoption and strategies to encourage their use.

Burden of urticaria

The global burden of urticaria has increased from 1990 to 2019, with significant geographical heterogeneity.[26] In 2019, the global number of cases reached 114 million, with 3.9 million disability-adjusted life-years. The burden is generally higher in female subjects and varies with age and sociodemographic index.[26] A prospective study at King Chulalongkorn Memorial Hospital from May 2001 to October 2003 showed that the prevalence of food-induced urticaria was 7%. Food was more frequently associated with acute rather than chronic disease.[27] A retrospective cross-sectional study of patients with CU at the same institution, from January 2003 to December 2006, showed that 41% of patients treated with H_1-antihistimines experienced complete remission for a median duration of 2 years (range, 6 months to 5 years). Complete remission was associated with female sex, a history of atopic disease or angioedema, or family history of atopic disease.[28] In Asia, the socioeconomic impact of AR and urticaria is substantial, with estimated indirect costs of $105.4 billion annually as a result of inadequate treatment.[24] A retrospective study at the Siriraj Hospital, Mahidol University, Thailand, between 2000 and 2013 showed that CU in aging patients was uncommon (4.1%).[29] A prospective longitudinal study in Thailand is ongoing with the objective to investigate long-term treatment responses, clinical outcomes, and patient-reported outcomes for CU.[30]

Most respondents (86.6%) agreed that managing urticaria is challenging. Some patients present with multiple subtypes that respond independently to treatment.[16] Studies show that CU carries a significant patient and societal burden with substantial morbidity and diminished QoL, including reports that prevalence has increased 2- to 10-fold over the last decade.[14,31-33]

Treatment options

Controlling AR and urticaria is paramount for QoL issues and for decreasing the severity of associated comorbidities. Second-generation antihistamines are superior to first-generation antihistamines thanks to their high H_1 receptor selectivity, low brain

permeability, longer durations of action, and fewer adverse effects. High-quality evidence from large trials and meta-analyses supports the safety and efficacy of newer-generation H_1-antihistimines, leading treatment guidelines to recommend them as first-line treatment for both conditions.[34,35]

Second-generation antihistamines. Second-generation antihistamines exhibit distinct pharmacokinetics and dynamics, including receptor binding affinity, onset of action, and duration of effect. A brief overview of the essential summary of product characteristics of the most commonly used second-generation antihistamines is shown in Table II. Most have a duration of action of at least 24 hours, facilitating once-daily dosing.[34] They also differ in their safety profiles, including adverse effects, drug–drug interactions, and contraindications. This diversity allows for individualized treatment plans that consider disease severity, duration, patient preferences, adherence to treatment, and medication effectiveness, as advised by current guidelines. Thai practitioners indicated a strong preference (94.3%) for second-generation antihistamines, consistent with international (ARIA and EAACI [EAACI]/GA^{2}LEN/European Dermatology Forum [EDF], and the World Allergy Organization [WAO]) and Thai Clinical Practice Guidelines.[2,16,36,37]

First-generation antihistamines. First-generation H_1-antihistimines, all of which are sedating, are generally regarded as safe by consumers and health care professionals as a result of their long-standing use.[38] However, they can cause residual daytime drowsiness as well as impaired cognitive function and psychomotor performance.[34,37,38] This negative adverse effect profile is well documented, and several treatment guidelines no longer recommend prescribing them for managing AR or urticaria.[2,13,39]

Despite the known effects of first-generation antihistamines, it is surprising that some, albeit few, experts disagreed with or were neutral about this statement, which could suggest that some clinicians treating AR and urticaria typically do not evaluate sleep stages in their patients. This lack of assessment might explain their uncertainty about whether the impairing effects of first-generation antihistamines specifically influence sleep. These findings highlight the need for further research to establish standardized protocols for sleep evaluation in patients being treated with these medications. This could help quantify the impact on sleep stages and provide more definitive guidance for clinicians.

Thai experts strongly endorsed ODT antihistamines' perceived benefits, versatility, and applicability across different patient groups. This formulation offers several patient-friendly advantages over conventional tablets, notably ease of administration, convenience, and portability. ODTs can address diverse clinical needs and are also cost-effective to manufacture. They provide a valuable alternative over conventional formulations, allowing patient comfort and adherence to be prioritized.[40,41]

Treatment of allergic rhinoconjunctivitis

The EAACI/ARIA guidelines outline the clinical properties of the ideal oral H_1-antihistimines, and most modern H_1-antihistimines meet these requirements.[2] A comparison of the clinical profiles of various second-generation antihistamines indicates that bilastine in particular has the highest number of ARIA-recommended antihistamine properties.[7]

Their pharmacologic profiles support the preference for second-generation H_1-antihistimines in managing pediatric allergic rhinoconjunctivitis. They address the immediate allergic symptoms and align well with the therapeutic goals for children, which include maintaining normal activity levels and minimizing adverse effects.

Treatment of acute and CU

As with AR, second-generation H_1-antihistimines are efficacious in both acute urticaria and CU and are recommended as first-line therapy.[16,42,43] For CU, the EAACI/GA^{2}LEN/EDF/WAO guideline recommends antihistamines be taken daily until no longer needed.[16] The dosing regimen is essential to patient adherence, as patients often hesitate to continue treatment if they do not experience immediate relief.[44] Thus, a nonsedating antihistamine that restores a patient's QoL is essential to enhance the treatment experience.

For all types of urticaria, standard-dosed modern, second-generation H_1-antihistimines like bilastine, cetirizine, desloratadine, ebastine, fexofenadine, levocetirizine, loratadine, and rupatadine are supported by clinical evidence. However, there is no clear recommendation on which to choose as a result of the lack of well-designed clinical trials comparing their efficacy and safety.[16]

In children, antihistamines with proven efficacy and safety include bilastine, cetirizine, desloratadine, fexofenadine, levocetirizine, loratadine, and rupatadine. Prescriber selection should consider age restrictions and availability, as some are not licensed for children under 6 months in many countries, and not all are formulated for pediatric use.[16]

Role of up-dosing in managing CU

For CSU, initial treatment per the European EAACI/GA^{2}LEN/EDF/WAO urticaria guideline is a standard-dose, second-generation H_1-antihistimine.[16] However, despite their widespread use, these antihistamines fail to adequately control symptoms in 50% of patients.[16,42] In such cases, up-dosing to 4 times the licensed dose is recommended. This strategy enhances effectiveness in some patients, although many remain symptomatic. Notably, bilastine, cetirizine, desloratadine, fexofenadine, levocetirizine, and rupatadine have demonstrated improved outcomes when administered at higher doses. While expert opinion largely informs these recommendations, the accumulated evidence base supports their validity.[45-48]

Although only up-dosing is recommended in the European guideline,[16] other second-line solutions to inadequate antihistamine response include switching or combining different second-generation H_1-antihistimines, as is recommended in American guidelines.[42] However, the efficacy, safety, and drug–drug interactions between different antihistamine combinations have not been well studied, and existing evidence suggests that there may not be adequate benefits in combining antihistamines.[49] The choice between these approaches remains a matter of clinical judgment. Interestingly, 87.6% of our respondents favored up-dosing a single agent over combination therapy for managing urticaria symptoms, highlighting a preference for simplicity and consistency in treatment approaches.

Special populations

Sedating antihistamines have been linked to accidents in aviation, driving, and boating as a result of their impact on psychomotor skills.[50] Respondents strongly supported the use of nonsedating antihistamines in safety-critical occupations, in line with the literature and guidelines recommending their avoidance to prevent impaired performance.[51,52]

In general, any systemic treatment should be avoided in pregnant women, especially in the first trimester. Most clinicians agreed on prescribing modern, second-generation H_1-antihistimines. This aligns with EAACI/GA^{2}LEN/EDF/WAO guidelines and recommendations that advocate the cautious use of medications to mitigate potential risks to fetal and maternal health.[16] All H_1-antihistimines are excreted in breast milk in low concentrations. Use of second-generation H_1-antihistimines is advised, as nursing infants occasionally develop sedation from first-generation antihistamines transmitted in breast milk.[16]

Because of age-related physiologic changes, older adults are more sensitive to anticholinergic effects in the central nervous system; therefore, guidelines discourage prescribing first-generation H_1-antihistimines in this group.[53,54] Among older patients, especially those with comorbidities, bilastine emerged as the preferred first choice for 78% of respondents. Desloratadine (43%) and cetirizine (33%) were the second and third choices.

Comparisons of the clinical profile differences between second-generation H_1-antihistimines indicate that bilastine and fexofenadine require no dosage adjustments in renal or hepatic impairment.[7] Loratadine requires adjustment in severe hepatic disease.[7] Because of its stable pharmacokinetic profile in these conditions, Thai practitioners favored bilastine as the preferred first choice (92%). The second- and third-choice antihistamines were desloratadine (49%) and cetirizine (28%).

Study limitations

The study methodology presents several limitations. First, only the use of antihistamines was discussed, while corticosteroids, biological agents, and immunotherapy are also available in Thailand, although the latter two can only be administered by a specialist to patients whose disease has failed to respond to traditional treatments, following extensive consultation regarding diseases and/or severe conditions. Second, response bias may occur if respondents provide socially desirable answers rather than genuine reflections of their practices. Furthermore, the study's reach may be limited because it predominantly sampled clinicians within the AAIAT network, which may not accurately represent broader viewpoints. However, as a multidisciplinary organization, the AAIAT represents most certified specialists involved in AR and urticaria management. Therefore, this can be a guideline for others treating AR and urticaria, including general practitioners, internal medicine doctors, and pediatricians. Moreover, medical practices in Thailand are representative of those in Southeast Asia, thereby increasing the value of our findings.

Conclusions

AR and urticaria pose significant health challenges as a result of their symptom burden and impact on patient QoL. This AAIAT study showed that economic factors notably influence medication selection, emphasizing the need for cost-effective treatments within government and insurance frameworks. The study reveals a preference for personal clinical experience over standardized tools among health care professionals. Although this approach allows for customized patient care, it highlights a gap in the utilization of standardized, evidence-based tools. Further research is recommended to understand the barriers to adopting these tools. Improving guideline adherence and utilizing pharmacists to enhance awareness and medication use are valuable strategies to ensure more consistent and effective disease management. These will ultimately improve patient outcomes and QoL while reducing the economic burden of these conditions.

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Key messages

- **A knowledge gap in evidence-based practices was identified among Thai clinicians managing AR and urticaria.**
- **Enhancing adherence to clinical guidelines and involving pharmacists in patient care can improve medication access and disease management.**
- **These measures could improve patient outcomes and reduce the socioeconomic burden of these conditions.**

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